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ABSTRACT

The personal problem-solving process can be functionally analyzed from a cognitive-behavioral perspective into at least four major performance classes: (1) decision making; (2) problem exploration, differentiation, and definition; (3) identification of response alternatives; and (4) performance of an intended solution response. The personal problem-solving approach is a complex chain of events that consists of innumerable cues, behaviors, critical choice points, and consequences. The functional analysis identifies major classes of behaviors, delineates various activities within each behavioral class, and identifies variables affecting differences across and within individuals. The functional analysis can provide a framework for describing how people solve real-life personal problems. (Author/JAC)

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A Functional Analysis of Real-Life, Personal Problem Solving

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Running Head: Problem Solving Analysis

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A Functional Analysis of Real-Life, Personal Problem Solving

Problem solving has been the focus of inquiry in psychology for some time (e.g., Davis, 1966; Gagne, 1964; Maier, 1970; Newell, Shaw, & Simon, 1958). Although the central purpose of counseling has been conceptualized as helping clients resolve problems (Krumboltz, 1965; Weitz, 1971), a review of the counseling psychology literature revealed only a handful of studies which explicitly attended to the problem solving process (Heppner, 1978). Furthermore, researchers within counseling have not developed a technology for helping clients with regard to problem solving and decision making (Horan, 1979). One reason which might explain the lack of research on problem solving in counseling may be the seemingly irrelevancy of the problem solving research for the practitioner, such as research which employs water jar problems (e.g., Jacobus & Johnson, 1964), anagram problems (e.g., Tresselt & Mayzner, 1960), and arithmetic problems (Klausmeier & Laughlin, 1961). Several writers have noted that some of the earlier research examined how people solved pre-defined laboratory problems, which may be different or less complex than how people solve real-life, applied personal problems (e.g., Wickelgrin, 1962). Other investigators have also noted that the previous decision making research is not applicable to real-life, personal decision making (Heppner, 1978; Horan, 1979; Janis & Mann, 1977). In fact, Janis and Mann (1977) have compiled evidence which suggests that people making decisions in hypothetical laboratory problems often react entirely different when confronted with the same cognitive problem involving real consequences (Collins & Hoyt, 1972; Cooper, 1971; Deutsch, Krauss, & Roseman, 1962; Gerard, Blevens & Malcolm, 1964; Nel, Helmreich, & Aronson, 1969; Singer & Kornsfield, 1973; Taylor, 1975).

The focus of this paper is on how people solve real-life, personal problems. Previous theoretical conceptualizations of the applied problem solving process

have remained at a global, stage-level (e.g., Clark, Galett, & Levine, 1965; D'Zurilla & Goldfreid, 1971; Urban & Ford, 1971) or have been approached through a strictly operant analysis (e.g., Skinner, 1953, 1966, 1969). It is important to note that most of the problem solving models not only consist of stages, but often describe the way a person should act when successfully solving problems. It is one task to delineate what people should do to be systematic and effective problem solvers; it is another task to describe how people actually solve personal problems.

The purpose of this paper will be to functionally analyze the personal problem solving process from a cognitive-behavioral perspective. While the utility and even necessity of performing a thorough functional analysis of a problematic situation has been advocated in the professional literature (Mahoney & Thoresen, 1974) this occurs only rarely. Ferster's (1973) analysis of depression is a notable exception. The basic tasks of a functional analysis are twofold: (a) to objectively describe behavior in terms of functional performance classes, and (b) to apply basic behavioral processes to discover variables that increase or decrease the frequency of behaviors within performance classes (Ferster, 1973). The intended outcome of the functional analysis of the personal problem solving process is a step toward a more complex model which describes how people solve personal problems. It is also hoped that a functional analysis of this kind will provide a framework for future empirical research that will identify important events involved in the complex chain of events called personal problem solving.

The first task of the paper will be to define the topic, personal problem solving, and differentiate that activity from closely related processes. In addition, dimensions that describe different kinds of problems will be identified and discussed. The second task of the paper will be to functionally analyze the personal problem solving process. The problem solving process will be conceptualized as a complex chain of events which consists of innumerable cues, behaviors,

critical choice points, and consequences. Attempting to specify the suquential pattern of personal problem solvers or even a single individual is a futile task because of the astronomical permutations of the various problem solving activities. An alternative approach to analyze the chain of events called problem solving by initially identifying the major classes of behaviors, and then delineating various activities within each behavioral class. Four major classes of behaviors will be discussed: (a) decision making, (b) personal problem exploration/differentiation/definition, (c) identification of response alternatives or solutions, and (d) performance of an intended solution response.

Definitions: Personal Problems vs. Formal Problems vs. Tasks

People are confronted daily with a variety of tasks (some of which may become problems) as well as a number of problems. Tasks are defined as situations which require a response or chain of response which a person immediately has the ability to adequately perform. Tasks may include repairing a flat bike tire, mowing the lawn, telephoning a friend, writing a professional paper. A problem refers to a situation in which a person does not immediately have an adequate response available, such as repairing a car tire without a jack, inability to lose weight, continually feeling depressed, and being unable to catch a trout for a special dinner. Problems which daily confront people differ along several dimensions, such as: vague-well defined problems, unspecified-specified operations, vague-defined goals, intangible/difficult to measure-tangible/measurable outcomes, internal, personal contingencies-external, environmental contingencies. The permutations of the various dimensions result in substantially different types of problems. For example, some problems present themselves well defined (e.g., a failing grade for a studious student), whereas others problems are vague (e.g. feeling depressed). Some problems have clearly stated goals (e.g., a critical literature review paper with approporiate operational definitions) that not only have

tangible and measurable outcomes (e.g., grades, publication acceptance), but also have specified operations for solving the problem (e.g., library research, discussion with faculty). Conversely, other problems have vague goals (e.g., feeling "happy", not depressed), are difficult to measure because of the subjective nature of the problems, and the allowable courses of action for solving the problem are not clearly specified. In addition, some problems involved external, environmental contingencies which result in strong demands to solve a problem (e.g., paper or examination deadlines) as opposed to internal or personal contingencies (e.g., internal satisfaction of not feeling depressed). Wicklegrin (1974) has labeled problems which are well defined, and have specified operations as well as clear goals as formal problems; parenthetically, it is these kinds of problems that seem to have been the focus of most of the traditional problem solving research. Conversely, problems which are best described as vaguely defined, having unspecified operations, vague goals, intangible outcomes, and internal contingencies are those that most often bring people to counseling situations, and are called "personal problems."

A Functional Analysis of Personal Problem Solving

Four major classes of behavior have been identified within the personal problem solving process: (a) decision making, (b) personal problem exploration/differentiation/definition, (c) identification of response alternatives or solutions, and (d) performance of an intended solution response. The first class of behaviors is very broad, and cuts across the traditional problem solving stages such as problem identification, generation of alternatives, decision making, performance of intervention strategies, and evaluation. The last three classes of behavior are not as encompassing as a decision making but are distinct classes of behaviors which do not generally occur as systematically as the term "stages" implies. Rather behaviors within each of these classes typically occurs throughout the personal problem solving process.

The next ten pages of the current draft of the paper analyze the personal problem solving process. Roughly 50 references will be cited to substantiate the functional analyzes, which will include, in part, the work of (a) Janis and Mann, (b) Horan, (c) Nezu and D'Zurilla, (d) Shanteau, (e) Miller, Galanter, and Pribram, (f) Richards, and (g) Platt and Spivack.

Briefly, an analysis of the problem solving process revealed that decision making behaviors occur in conjunction with the other three major performance classes. Important individual differences exist in people's decision making behaviors as well as the other three classes of behaviors. These differences are delineated and discussed in terms of the individual's (a) prior reinforcement history, (b) current reinforcement schedules, and (c) environmental discriminative stimuli and reinforcement contingencies. The class of events that first stimulates a cue for a choice point in the personal problem solving process is problem perception. Activities within this class of behaviors range from problem awareness to problem definition, and include problem exploration, data collection, problem differentiation, and problem classification. A common activity includes data collection on varying levels of specificity by assessing oneself (ones feelings, emotions, cognitions), ones environment (norms, expectations, reinforcers), and elements of the problematic situation (obstacles, goals). A critical chain of behaviors is the process in which the person identifies and evaluates alternatives; important individual differences exist across individuals in how they approach or avoid this task, which seem to be related to cognitive style, ability to utilize one's past learning, responding to physiological responses, and impulsivity. The class of events associated with performing a response alternative is best characterized as experimentation. While investigators have not extensively investigated the steps or means individuals use to solve problems, the process is discussed in terms of reinforcement contingencies as well as the number and strength of competing demands operating on the individual.

While the interspersing of problem solving activities or the overlapping of steps have been cited before (e.g., Davis, 1973; D'Zurilla & Goldfried, 1971; Horan, 1979), previous writers discuss this almost parenthetically. It seems that the intermingling of various classes of problem solving behavior is an essential feature of the personal problem solving process. This article maintains that there are four major performance classes, which are interspersed in a complex and highly variable manner. Whereas other models of problem solving typically describe the process in terms of stages, this seems to be a considerable oversimplification. It is important to note that there are many choice points throughout the problem solving chain, and that individuals typically do not proceed in a systematic manner. Instead it is aptly characterized as a "trial and error" process (Horan, 1979), a process which is highly variable across and within individuals, and may involve a great deal of chance or serendipidous events. This model is in contrast to other problems solving models which describes how people should act to be a successful problem solver.

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